



# GREEN HOSPITALS WORLDWIDE

## GLOBAL GREEN and HEALTHY HOSPITALS



A GLOBAL NETWORK ACCELERATING SUSTAINABILITY IN HEALTH CARE



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# The Environmental Crisis is Global



The health sector environmental footprint

## Greenhouse gas emissions

- NHS-England represents 25% of the public sector carbon footprint
- U.S. health care industry represents 8% of their carbon footprint nationally

The incineration of medical waste



# The good news

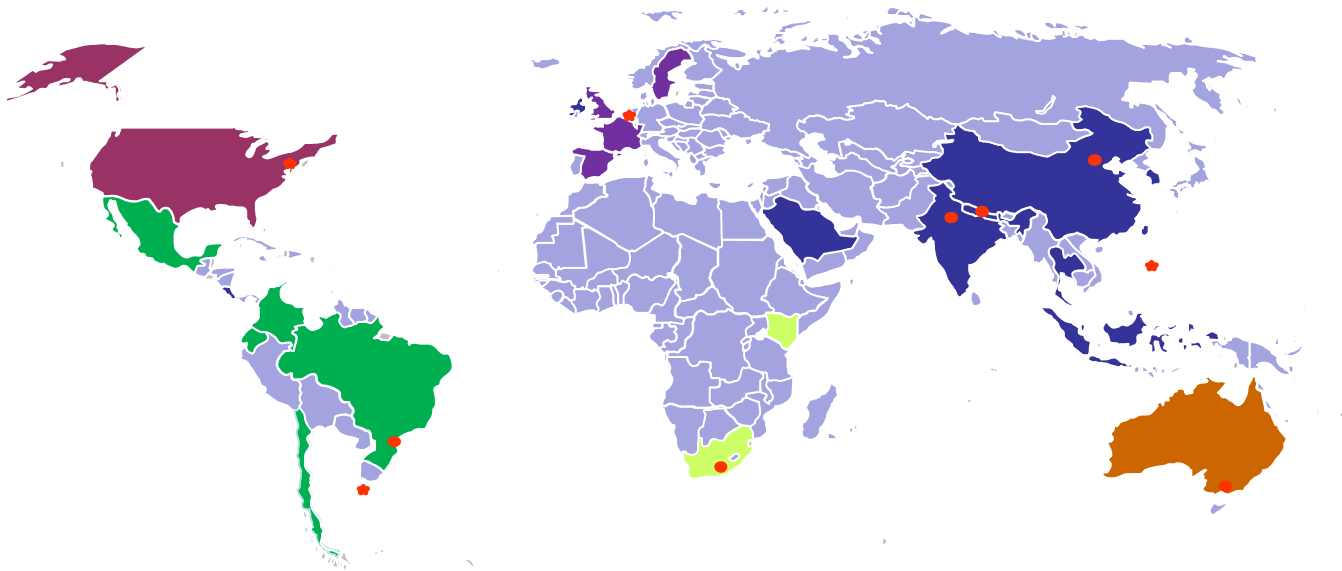
The health care sector can play a leading role in solving these problems. Through its massive buying power and mission-driven interest in preventing disease, the health care sector can help shift the entire economy toward sustainable, safer products and practices.



# Global Green and Healthy Hospitals (GGHH)

A worldwide community...

- of hospitals, healthcare systems and organizations
- dedicated to reducing the ecological footprint of healthcare operations
- while promoting environmental and public health in their communities



# GGHH Objectives

Serve as a vibrant virtual community

- Hospitals & health systems

Chart progress

- Achieving measurable outputs
- Sharing best practices
- Finding solutions to common challenges
- Raising standards

Mobilize health care to work together

- Improve environmental health
- Locally and globally



# GGHH Goals



Leadership



Chemicals



Waste



Energy



Water



Transportation



Food



Pharmaceuticals



Buildings



Purchasing

# GGHH Goals



Leadership



Chemicals



Waste



Energy



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Purchasing



# Climate change is the biggest global health threat of 21st century

The impacts will be felt all around the world – and not just in some distant future but in our lifetimes and those of our children.

-- The Lancet



#### North America

2 Organizations representing the interest of 900 Hospitals and 13 major Health Systems

#### Europe

12 Hospitals, 14 Health Systems and 6 Organizations representing the interest of 458 Hospitals and 43 Health Centers)

#### Latin America

311 Hospitals, 16 Health Systems and 12 Organizations representing the interest of 705 Hospitals and 699 Health Centers)

#### Asia

26 Hospitals, 3 Health Systems and 4 Organizations representing the interest of 2207 Hospitals and 3099 Health Centers)

#### Africa

3 Hospitals

#### Pacific

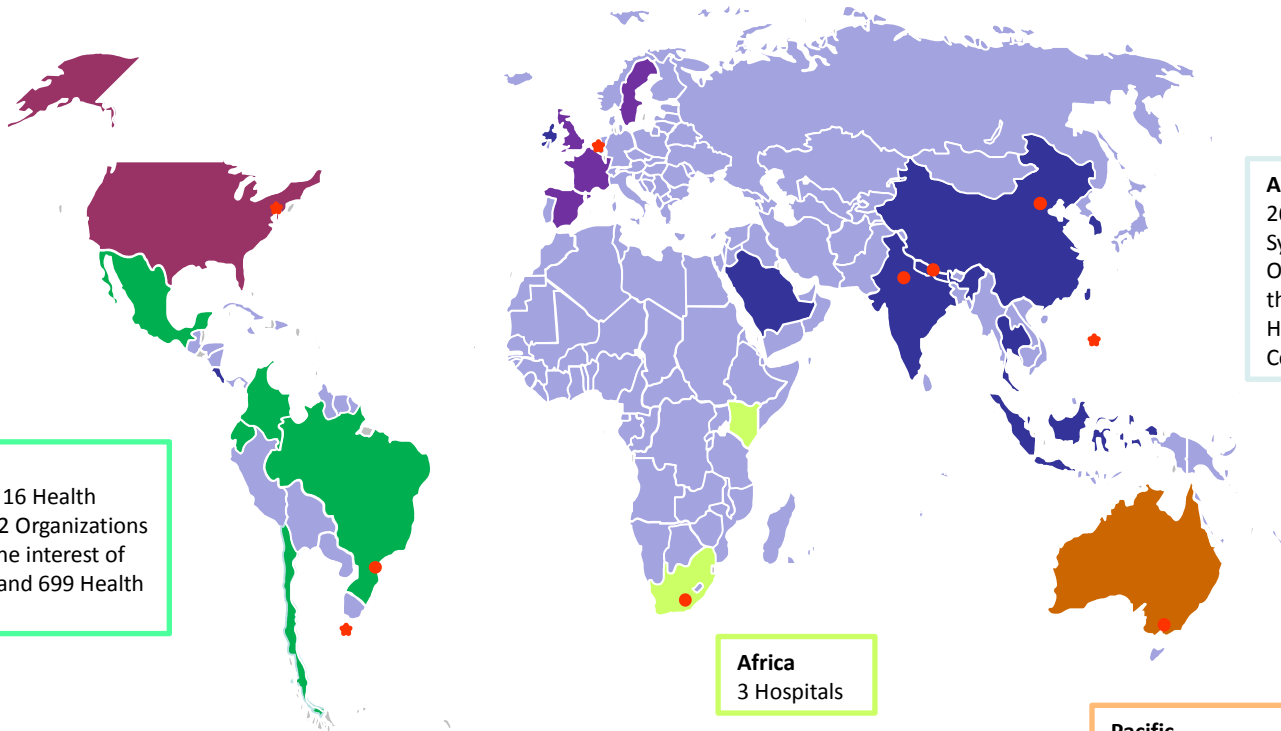
4 Hospitals, 2 Health Systems and 2 Organizations representing the interest of 31 Hospitals and 302 Health Centers)

#### Global

2 Organizations representing the interest of 900 Hospitals

**Totals:** As of June 2014, GGHH has 419 members from 30 countries representing the interest of 5204 Hospitals and 4143 Health Centers

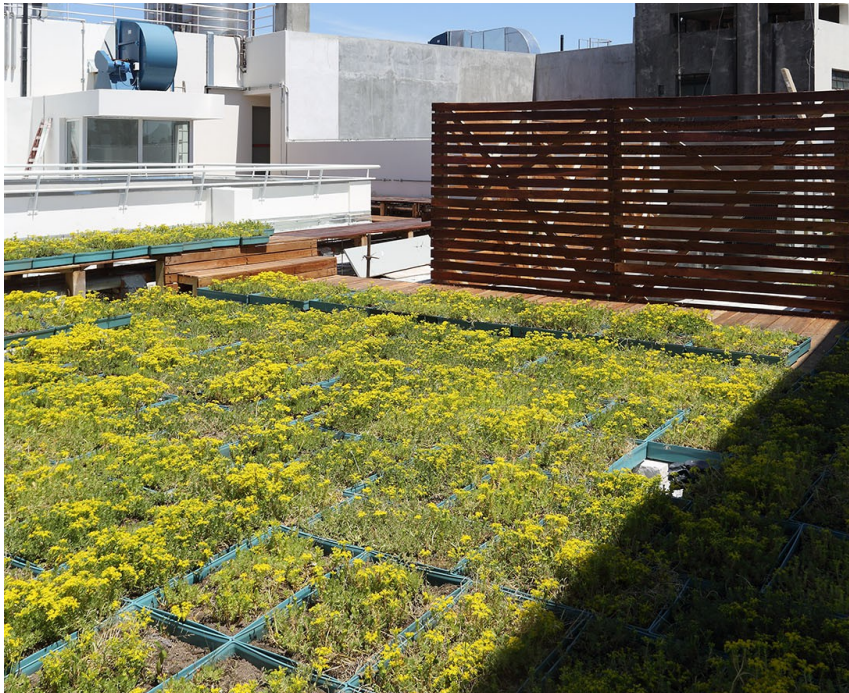
★ HCWH Regional Offices  
● Strategic Partners





# Sanatorio Finochietto, Buenos Aires, Argentina

- Natural lighting
- Roof gardens and green roofs





# Sanatorio Finochietto, Buenos Aires, Argentina

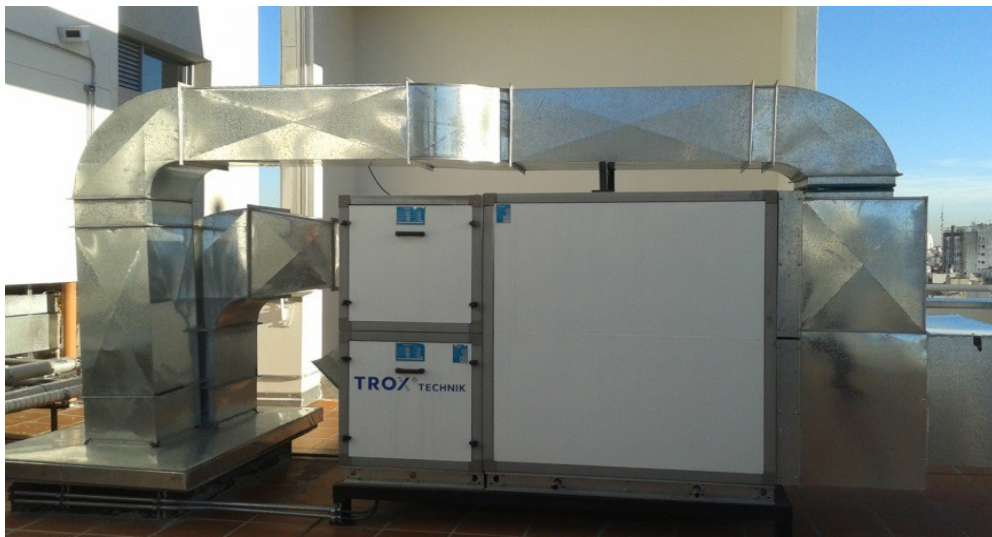
- Thick thermal insulation in walls
- Sunshades and a ventilated facade system





# Sanatorio Finochietto, Buenos Aires, Argentina

- Heat recovery VRV
- Geothermal interchange
- Heat exchange between the exhausts, and fresh air inlet



# Hospital Sirio-Libanes, São Paulo, Brazil

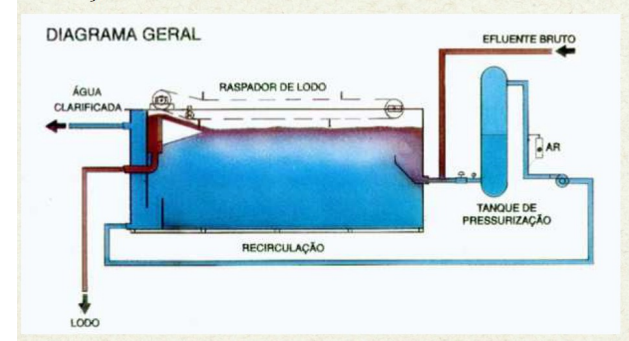
- Treatment/reuse of greywater
  - Water from sinks, showers and urinals
- Reuse water in new hospital towers
  - in toilet bowls, cooling towers and vegetated areas of the hospital



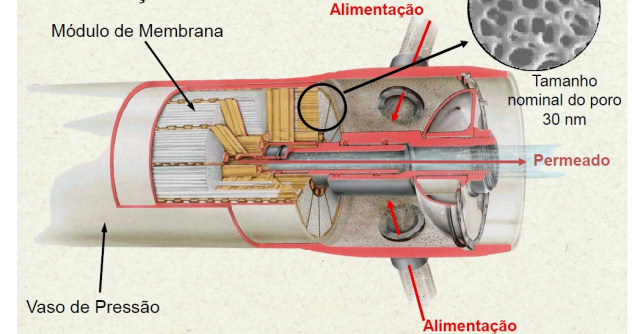
# Hospital Sirio-Libanes, São Paulo, Brazil

- Uses customized technology
  - a system that separates organic material by flotation with subsequent ultrafiltration
  - providing ultra-filtered reusable water without suspended solids and biological material

Flotação



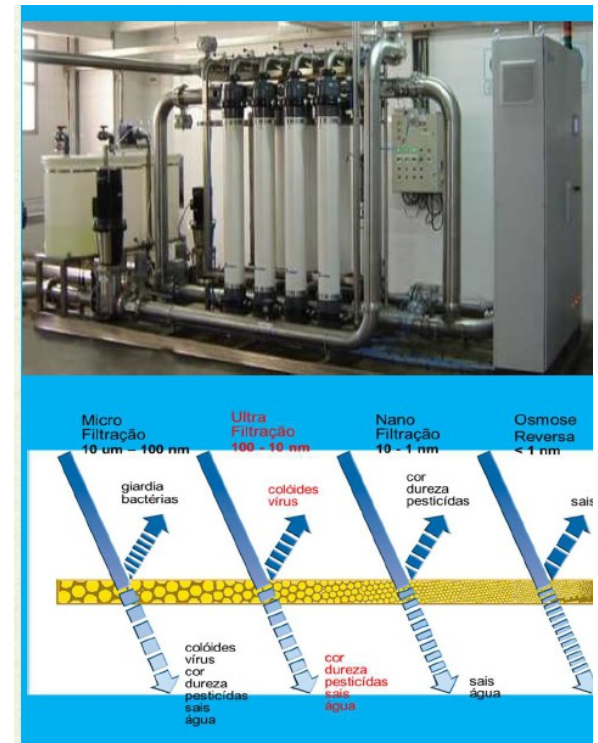
Ultrafiltração





# Hospital Sirio-Libanes, São Paulo, Brazil

- Saves 90,000 m<sup>3</sup> of water per year
- Payback: R\$ 650,000/year (approximately US\$280.000)
- Return on investment breaks-even within 12 months.





# Buildings

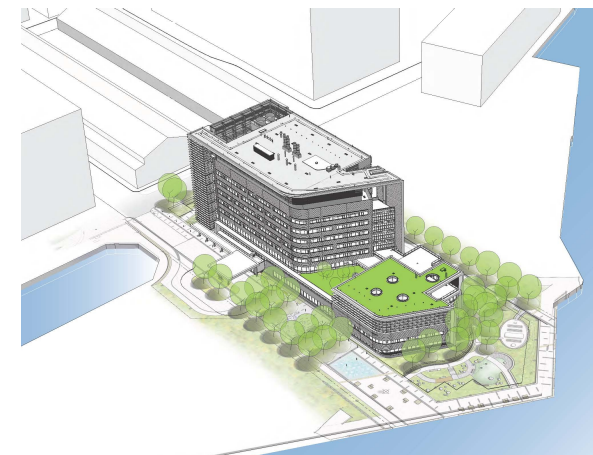
Global building-related activities may be responsible for up to  
**40% of carbon dioxide releases**

China: **\$10 Billion** a year in health care construction

# Partners HealthCare (U.S.)

25% reduction in energy consumption over 5 years on a \$100m U.S. annual energy bill

- 230 energy conservation measures
  - Average payback 3.7 years
  - 27% annual ROI
- Annual pollutant reduction resulting from the energy conservation measures:
  - 21.6 tons of sulphur dioxide, 5 tons of nitrous oxide, 6,332 tons of carbon dioxide and 0.15 tons of mercury.



# Bright ideas — Rikshospitalet Medical Center, Oslo, Norway

## Daylight for patients and employees

- Central indoor day lit street
- Courtyards
- Small floor plates
- Windows in surgery areas



# Sanatorio Finochietto, Buenos Aires, Argentina

- thick thermal insulation in walls
- sunshades and a ventilated facade system





# Engagement – Behavior Change

Barts and the London Trust, UK National Health System (NHS)

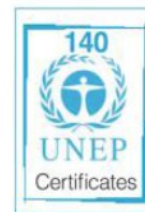
Saved £105,000 in first year

If used across all health trusts in UK, could save £35million

- Aligned energy saving measures with practices that improved patient experience
- The program paid for itself in less than one year,

## Operation TLC Results

£105,000 & 800tCO<sub>2e</sub>  
saved over 1 year

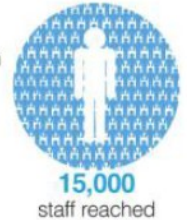


1 in 3 patients experience better privacy  
1 in 4 experience less disturbed sleep from noise in engaged areas



“ 5,000  
engaged  
sustainability  
conversations  
”

35 teams  
completing 3  
or more  
challenges



15,000  
staff reached

40%  
more lights switched  
off in engaged areas



18%  
more closed doors in  
engaged areas



Environmental Factors  
**equal**  $\frac{1}{4}$  of the global  
burden of disease

*Source:* World Health Organization



# Bir Hospital, Nepal - Waste Management

HCWH/GGHH  
collaboration with  
Health Care Foundation  
Nepal

Before



After

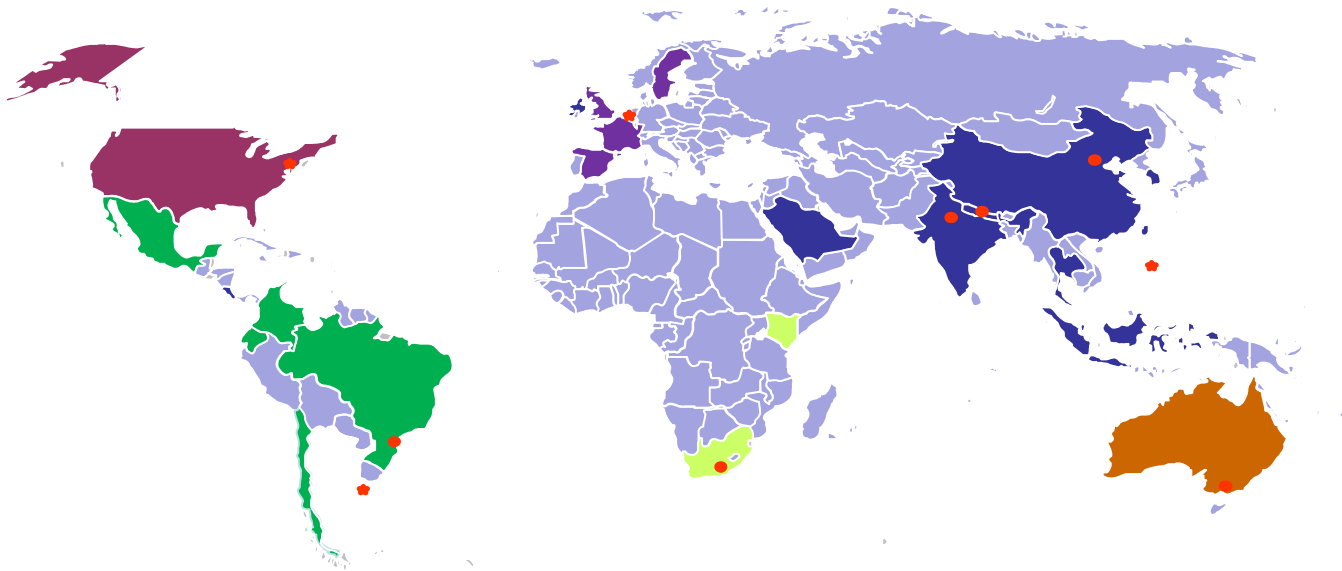




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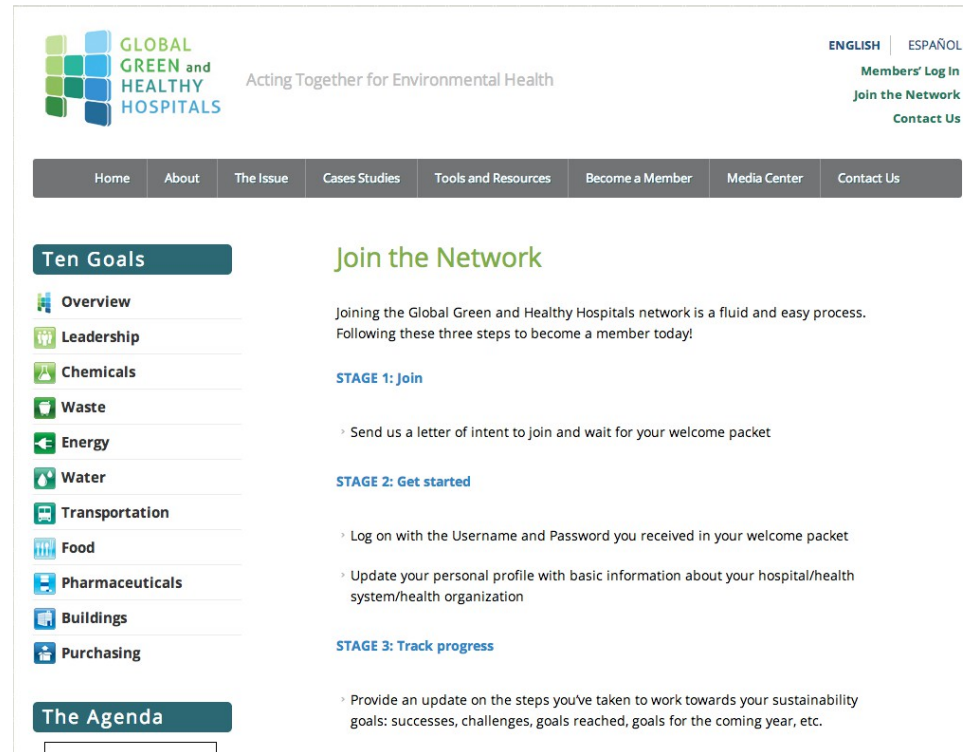


# Joining GGHH

Only Health Care members

- Hospitals
- Health Systems
- Health Care Organizations

Member request on website:  
[www.greenhospitals.net](http://www.greenhospitals.net)



GLOBAL GREEN and HEALTHY HOSPITALS  
Acting Together for Environmental Health

ENGLISH | ESPAÑOL  
Members' Log In  
Join the Network  
Contact Us

Home | About | The Issue | Cases Studies | Tools and Resources | Become a Member | Media Center | Contact Us

### Ten Goals

- Overview
- Leadership
- Chemicals
- Waste
- Energy
- Water
- Transportation
- Food
- Pharmaceuticals
- Buildings
- Purchasing

### The Agenda

### Join the Network

Joining the Global Green and Healthy Hospitals network is a fluid and easy process. Following these three steps to become a member today!

**STAGE 1: Join**

- Send us a letter of intent to join and wait for your welcome packet

**STAGE 2: Get started**

- Log on with the Username and Password you received in your welcome packet
- Update your personal profile with basic information about your hospital/health system/health organization

**STAGE 3: Track progress**

- Provide an update on the steps you've taken to work towards your sustainability goals: successes, challenges, goals reached, goals for the coming year, etc.